

[018] The FIG. 1 shows an enlarged section of an outside disk holder 1 of a (not shown) shifting element in an automatic transmission for motor vehicles. Disk holders of this type are known, for example, by the above mentioned patent application of the applicator with the official serial No. 103 02 075.6. A shifting element incorporates, as a rule, outer disk carriers, which have an inner profile for the acceptance of an outer profile of outer disks and inner disk carriers having an outer profile for the acceptance of an inner profile of inner disks. The disk carriers are somewhat pot-shaped. That is to say, they are cylindrically designed and made of sheet steel, whereby the profile can be stamped or rolled out. To this extent, the disk carrier is made by metal-formation and does not require machining. The partially presented disk carrier is an outer disk carrier with a central axis m, here shown in a displaced position and has an inner profile 2, which has designed teeth, somewhat trapezoidal in cross-section with spacing between them. Into this, profile 2 engages an outside toothing of a disk packet, which shows only the most external disks 3 ~~in dotted outline~~. This can also be shown as a pressure disk. The disks, or alternately, the pressure disk 3 possess an external toothing 3a, which meshes with the acceptance profile toothing 2. The outside disks or the pressure disk 3 is directed in accordance with the arrows X by pressure from the prestressed disk packet (not shown) and abuts itself against a snap ring 4, which is secured in a circumferential, complementary groove 5. The groove of the snap ring 5 possesses two inner sides, namely ~~[[5a]]~~ 5c, 5b and also a circumferential surface ~~[[5c]]~~ 5a, the width of which runs parallel to the central axis of the snap ring. The inner groove surface is slanted, and possesses an angle of inclination designated as  $\alpha$ , which measures, for example,  $2^\circ$ , that is to say, the groove side 5b is undercut. The angle of inclination  $\alpha$  is relative to radial plane E, which serves as a reference plane. In the same Figure, to the left, side 5c runs parallel to right side 5b, however, is not undercut. The groove 5 is made by a stamping machine (not shown) executing a radially movement toward the outside, following a plane slated at the angle of inclination  $\alpha$ . On this account, the two groove sides run, corresponding to the movement direction of the stamping machine, parallel to one another. The making of the groove 5 is thus done without machining, since the material of the disk holder 1 is sheared and – without material loss – pressed to the outside. The snap ring 4 possesses two flat surfaces 4a, 4b, which are in a conical relationship to one another. That is to say, they taper from their outside diameter 4c in the direction of their inner diameter. These flat surfaces 4a, 4b,

i.e., end faces, possess an angle of inclination  $\beta$  which is equal to, or greater than the angle of inclination  $\alpha$  of the groove side 5b. Also, again, the angle of inclination  $\beta$  is relative to the radial plane E. In this way, the side surface 4a is either parallel to or at an acute angle to the groove side 5b may be seen by the dotted line 4a' and the angle  $\beta'$  which is greater than  $\alpha$ . The abutment force of the outside disk, i.e., the pressure disk 3, which force is directed into the disk carrier 1, or more exactly said, effectively brought into the accepting profile 2, is designated in FIG. 1 by two arrows F. Because of the side to side agreement of the angles  $\alpha$  and  $\beta$  the resultant force F, which is in the neighborhood of the inner circumference of the groove 5a, migrates. That is to say, the supporting force F, practically without cause from a bending moment, is introduced into the outer area 2a of the inner profile 2. This is especially and assured action, if the angle  $\beta$  is larger than the angle of inclination  $\alpha$ . That portion of the disk carrier 1 which lies outside of the disk packet and the snap ring is designated as the crown area and is thus loaded only by tensile forces, which results in a considerably more favorable disposition of force. The crown area 2a, on this account, can be smaller and thus become even more space saving than otherwise.